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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/033,035	12/27/2001	Gunter Ries	32860-000257/US	8621
30596	7590	07/28/2004	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C.			NGUYEN, DANNY	
P.O.BOX 8910			ART UNIT	
RESTON, VA 20195			PAPER NUMBER	
			2836	

DATE MAILED: 07/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/033,035

Applicant(s)

RIES ET AL.

Examiner

Danny Nguyen

Art Unit

2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 12-23, 27-37, 40 and 41 is/are rejected.
- 7) ☒ Claim(s) 10, 11, 24-26, 38 and 39 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/27/01</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 1 and 29 are objected to because of the following informalities: the phrases "HTc superconductor material" should be defined in the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15, the phrase "main frequency is unclear".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 4, 12-19, 21, 22, 27-29, 32, 40, 41 are rejected under 35

U.S.C. 102(b) as being anticipated by Gamble et al (USPN 5,965,959).

Regarding claims 1, 14, 29, Gamble discloses a device comprises a superconductor flux pump with a transformer (40 and 42), the transformer including, on a secondary side (42), at least one super-conducting coil (e.g. col. 3. lines 33-38) in a rectifier (44), and two controllable switches (32 and 34), and a super-conducting coil of an electromagnet (24), wherein the pump feeds current into the super-conducting coil, wherein the secondary side coil including HTc super-conducting material (col. 5, lines 25-30).

Regarding claim 2, Gamble discloses the flux pump and the super-conducting coil are arranged in a chamber (30).

Regarding claims 12, and 40, Gamble discloses the transformer includes a ferrite core (col. 4, lines 65).

Regarding claim 13 and 41, Gamble discloses the transformer includes no core (shown in fig. 2).

Regarding claims 4, 21, 22, 32, Gamble discloses the MOSFETs are selected such that MOSFETs with a low forward resistance are provided (e.g. col. 5, lines 34-50).

Regarding claim 15, Gamble discloses the MOSFETs are driven from main frequency (clock of the controller 36 shown in fig. 8).

Regarding claims 16, 17, 27, 28, Gamble discloses current stabilization is implemented by regulating current amplitude (e.g. col. 8, lines 10-26).

Regarding claims 18 and 19, Gamble discloses a predefined temperature is maintained for the switches (e.g. col. 1, lines 9-21).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5-9, 23, 33-37, are rejected under 35 U.S.C. 103(a) as being unpatentable over Gamble et al in view of Feustel et al (USPN 5,990,459). Gamble discloses all limitations of claim 1 as discussed above, but does not disclose the transistors which are arranged on the thermal conducting material as claimed. Feustel teaches that using a plurality of transistors of the control circuit 1 are arranged on the thermal conducting plate (42) (col. 2, lines 29-34), wherein the plate including a heat sink 52), temperature sensor (e.g. 32). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the transistors of

Gamble to use the transistors which are arranged on the thermal plate in order to reduce thermal resistance (col. 2, lines 30-34).

6. Claims 3, 20, 30, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gamble et al in view of Van de Klundert et al (USPN 4,709,314). Gamble discloses all limitations of claim 1 as discussed above, but does not disclose the switches are coupled in parallel. Van del Klumder discloses a super-conducting device (fig. 3) comprises switches (2a and 3a) are connected in parallel. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the switches of Gamble to use the transistors which are coupled in parallel as taught by Van del Klumder in order to provide reduction of current carried.

Allowable Subject Matter

7. Claims 10, 11, 24-26, 38, 39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Danny Nguyen whose telephone number is (571)-272-2054. The examiner can normally be reached on Mon to Fri 8:00 AM to 4:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571)-272-2058. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DN

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7/18/2004



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